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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,738	07/12/2006	Ooe Masayuki	1270.46327X00	7230
20457	7590	04/07/2010	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP			HIGGINS, GERARD T	
1300 NORTH SEVENTEENTH STREET				
SUITE 1800			ART UNIT	PAPER NUMBER
ARLINGTON, VA 22209-3873			1785	
			MAIL DATE	DELIVERY MODE
			04/07/2010	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/585,738	MASAYUKI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	GERARD T. HIGGINS	1785	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 25 January 2010.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1,2,4-10 and 12-15 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1,2,4-10 and 12-15 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____ .

**DETAILED ACTION**

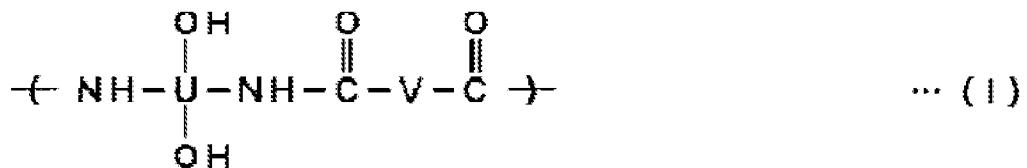
***Response to Amendment***

1. Applicants' amendment filed 01/25/2010 has been entered. Currently claims 1, 2, 4-10, and 12-15 are pending and claims 3 and 11 are cancelled.

***Claim Rejections - 35 USC § 102***

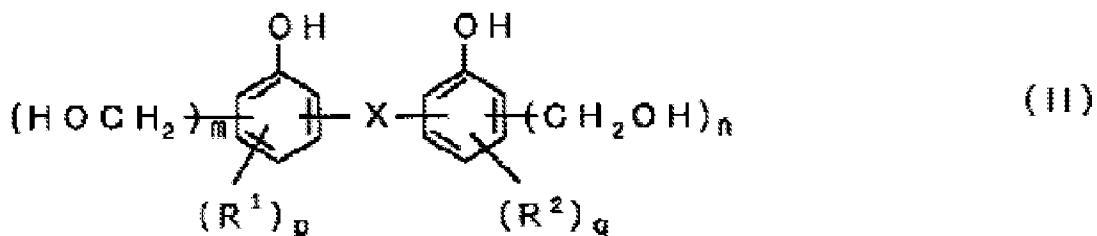
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1, 2, 4-10, and 12-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Tadayuki et al. (JP 2000-305268), machine translation included.

With regard to claim 1, Tadayuki et al. disclose a photosensitive polymer composition [0001]. The composition is comprised of a polyamide of Formula (I), component (a) [0008],



a compound that generates an acid upon light excitation, component (b) [0008], and the compound (II), component (c) [0009]

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The subscripts 'p' and 'q' may be zero and the subscripts 'm' and 'n' may be 1 or 2 [0009]. The substituent 'X' may be a propylene group or of the type of an alkylidene group, and all of the substituents on said group may be made to be fluorine atoms [0042]. This means that the Examiner clearly envisages Tadayuki et al. at least disclosing a 1,1,1,3,3,3-hexafluoropropyl group, which anticipates applicants' claim 1.

With regard to claim 2, given the disclosure of Tadayuki et al. the Examiner clearly envisages 2,2-bis[3,5-bis(hydroxymethyl)-4-hydroxyphenyl]-1,1,1,3,3,3-hexafluoropropane as claimed.

With regard to claim 4, the component (b) may be 5-100 parts by weight to component (a) [0039] and the component (c) may be 1-30 parts by weight to component (a) [0051].

With regard to claim 5, there may be a component (d) identical to that claimed [0052].

With regard to claim 6, the composition of component (d) is identical to that claimed [0054].

With regard to claim 7, the component (b) may be 5-100 parts by weight to component (a) [0039], the component (c) may be 1-30 parts by weight to component (a) [0051], and the component (d) may be 0.01-30 parts by weight based upon component (a) [0057].

With regard to claim 8, the process of using said photosensitive polymer composition is disclosed at [0061] and [0062]. It includes applying the composition to a substrate and drying said composition, an exposure process using light [0062], a development process, and then a heat-treating process [0061].

With regard to claim 9, see claim 15 of Tadayuki et al., which discloses said i-line.

With regard to claim 10, the method can be used to form an electronic part containing said composition as an interlayer film or a surface protection film [0001].

With regard to claims 12 and 13, the amount of component (c) is disclosed at [0051] and includes the preferential ranges of 1-30 and 5-20 parts per 100 parts of component (a), identical to that claimed.

With regard to claim 14, Tadayuki et al. disclose the developing solution at [0062], including alkaline aqueous solutions identical to that claimed (e.g. sodium hydroxide).

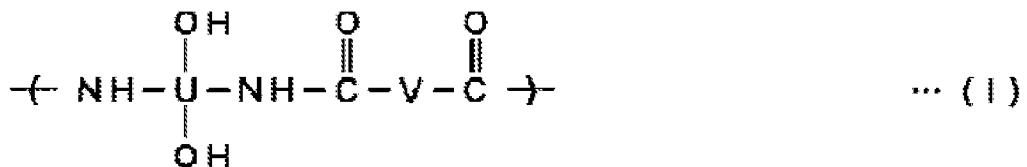
With regard to claim 15, Tadayuki et al. disclose a heat treatment step identical to that claimed at [0063], including 150-450 degree range identical to that claimed.

***Claim Rejections - 35 USC § 103***

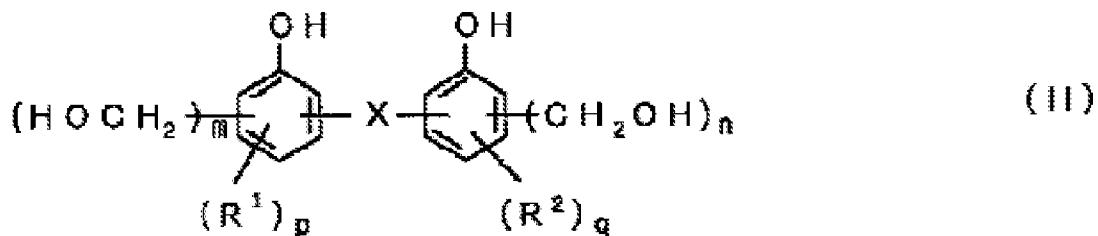
4. Claims 1, 2, 4-10, and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tadayuki et al. (JP 2000-305268), machine translation included.

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With regard to claims 1 and 2, Tadayuki et al. disclose a photosensitive polymer composition [0001]. The composition is comprised of a polyamide of Formula (I), component (a) [0008],



a compound that generates an acid upon light excitation, component (b) [0008], and the compound (II), component (c) [0009]



The subscripts 'p' and 'q' may be zero and the subscripts 'm' and 'n' may be 1 or 2 [0009]. The substituent 'X' may be a propylene group or of the type of an alkylidene group, and all of the substituents on said group may be made to be fluorine atoms [0042]. While the Examiner maintains that the Formula (II) of applicants' claim 1 and the specific compound of claim 2 are clearly envisaged (see section 4 above), the Examiner notes that Tadayuki et al. do not specifically disclose an embodiment where 'p' and 'q' are zero, a alkylidene group as 'X' that has been perfluorinated (i.e. R<sup>1</sup> and R<sup>2</sup> are a perfluoroalkyl of from 1 to 3 carbon atoms), or the specific compound of claim 2.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made any of the compounds disclosed by Tadayuki et al.

including a compound having 'p' and 'q' equal to zero, an alkylidene group as 'X' of from 3 to 7 carbon atoms that has been perfluorinated (i.e. R<sup>1</sup> and R<sup>2</sup> are a perfluoroalkyl of from 1 to 3 carbon atoms), or 2,2-bis[3,5-bis(hydroxymethyl)-4-hydroxyphenyl]-1,1,1,3,3,3-hexafluoropropane as claimed. The motivation for making any of the compounds of Tadayuki et al. is to have a compound that would have increased sensitivity, increase heat resistance, and increase the dissolution rate of an exposed part of the photoresist material [0041].

With regard to claim 4, the component (b) may be 5-100 parts by weight to component (a) [0039] and the component (c) may be 1-30 parts by weight to component (a) [0051].

With regard to claim 5, there may be a component (d) identical to that claimed [0052].

With regard to claim 6, the composition of component (d) is identical to that claimed [0054].

With regard to claim 7, the component (b) may be 5-100 parts by weight to component (a) [0039], the component (c) may be 1-30 parts by weight to component (a) [0051], and the component (d) may be 0.01-30 parts by weight based upon component (a) [0057].

With regard to claim 8, the process of using said photosensitive polymer composition is disclosed at [0061] and [0062]. It includes applying the composition to a substrate and drying said composition, an exposure process using light [0062], a development process, and then a heat-treating process [0061].

With regard to claim 9, see claim 15 of Tadayuki et al., which discloses said invention.

With regard to claim 10, the method can be used to form an electronic part containing said composition as an interlayer film or a surface protection film [0001].

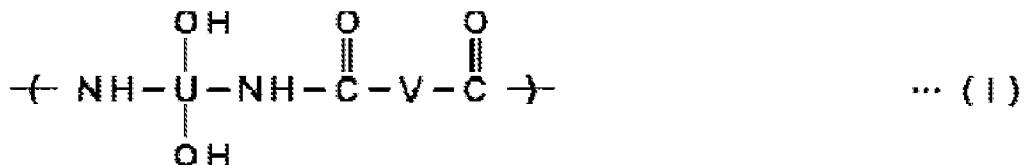
With regard to claims 12 and 13, the amount of component (c) is disclosed at [0051] and includes the preferential ranges of 1-30 and 5-20 parts per 100 parts of component (a), identical to that claimed.

With regard to claim 14, Tadayuki et al. disclose the developing solution at [0062], including alkaline aqueous solutions identical to that claimed (e.g. sodium hydroxide).

With regard to claim 15, Tadayuki et al. disclose a heat treatment step identical to that claimed at [0063], including 150-450 degree range identical to that claimed.

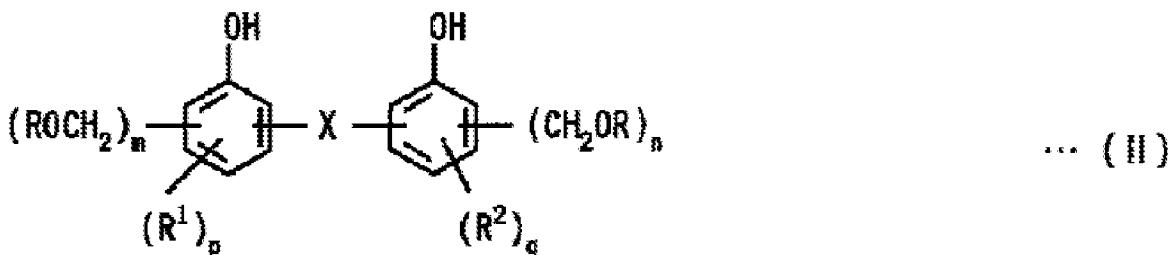
5. Claims 1, 2, 4-10, and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tadayuki et al. (JP 2001-312063) in view of Matsuishi et al. (US 2003/0204117), as evidenced by Tadayuki et al. (JP 2000-305268).

With regard to claims 1 and 2, Tadayuki et al. disclose a photosensitive polymer composition [0001]. The composition is comprised of a polyamide of Formula (I), component (a) [0008],



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a compound that generates an acid upon light excitation, component (b) [0008], and the compound (II), component (c) [0009]



The subscripts 'p' and 'q' may be zero and the subscripts 'm' and 'n' may be 1 or 2 [0009]. The substituent 'X' may be a propylene group or of the type of an alkylidene group, and all of the substituents on said group may be made to be fluorine atoms [0038]. The Examiner clearly envisages that Tadayuki et al. disclose a 1,1,1,3,3,3-hexafluoropropyl group, which reads on applicants' claim 1; however, they fail to disclose a crosslinker, component (c), that is comprised of a 3,5-bis(hydroxymethyl) substituent or that each of the Rs is hydrogen, i.e. hydroxymethyl substituents.

Matsuishi et al. disclose a 3,5-bis(hydroxymethyl) substituted polyfunctional phenols (Abstract). It can be apart of a bivalent group with the substituent 'X' being of General structure (IV), wherein the substituents R<sub>7</sub> and R<sub>8</sub> can each be a trifluoromethyl group. Matsuishi et al. disclose that this material is known to be good with photoresist materials [0002] and can provide property-modifying effects, such as improving the water repellency of phenol resins and resistance to heat [0005].

Since Tadayuki et al. and Matsuishi et al. are both drawn to photoresist materials; it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the functional equivalent compound of

Matsuishi et al. as the component (c) of Tadayuki et al. These compounds are analogs; further, one of ordinary skill would know to make a series of compounds including the methoxymethyl and hydroxymethyl compounds. The motivation for using this compound in the photosensitive composition is the fact that Matsuishi et al. recognize it as good for photoresists and can provide enhanced water-repellency of resins formed from these compounds.

The Examiner notes that it has been held that “[a]n obviousness rejection based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties.” Please see MPEP 2144.09, *In re Payne*, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979), *In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963), and *In re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1991). Matsuishi et al. disclose compounds that are close in chemical structure; further, they suggest that these compounds will provide heat resistance. The Examiner deems that it would have been obvious to one having ordinary skill in the art to have each ‘R’ of the component (c) be hydrogen as claimed. Given how close in structure "hydroxymethyl" and "alkoxymethyl" are, the Examiner has a reasonable basis to find that the modification proposed by the Examiner would have been predictable to one having ordinary skill. The predictability of such a modification is also evidenced by Tadayuki et al. ‘268, wherein their compounds which comprise hydroxymethyl substituents maintain high sensitivity for a positive-type photoresist polymer composition [0007].

With regard to claim 4, the component (b) may be 5-100 parts by weight to component (a) [0036] and the component (c) may be 1-30 parts by weight to component (a) [0041].

With regard to claim 5, there may be a component (d) identical to that claimed [0042].

With regard to claim 6, the composition of component (d) is identical to that claimed [0044].

With regard to claim 7, the component (b) may be 5-100 parts by weight to component (a) [0036], the component (c) may be 1-30 parts by weight to component (a) [0041], and the component (d) may be 0.01-30 parts by weight based upon component (a) [0047].

With regard to claim 8, the process of using said photosensitive polymer composition is disclosed at [0051] and [0052]. It includes applying the composition to a substrate and drying said composition, an exposure process using light [0052], a development process, and then a heat-treating process [0051].

With regard to claim 9, see claim 9 of Tadayuki et al., which discloses said i-line.

With regard to claim 10, the method can be used to form an electronic part containing said composition as an interlayer film or a surface protection film [0001].

With regard to claims 12 and 13, the amount of component (c) is disclosed at [0041] and includes the preferential ranges of 1-30 and 5-20 parts per 100 parts of component (a), identical to that claimed.

With regard to claim 14, Tadayuki et al. disclose the developing solution at [0052], including alkaline aqueous solutions identical to that claimed (e.g. sodium hydroxide).

With regard to claim 15, Tadayuki et al. disclose a heat treatment step identical to that claimed at [0053], including 150-450 degree range identical to that claimed.

### ***Response to Arguments***

6. Applicant's arguments filed 01/25/2010 have been fully considered but they are not persuasive.

At the outset, it appears that applicants' arguments are based upon two main thrusts. The first is that Tadayuki et al. '268 do not anticipate the current claims and the second is that Tadayuki et al. '268 or Tadayuki et al. '063 cannot render obvious the current claims because there is evidence of unexpected results.

Applicants argue on pages 8-9 of their Remarks that Tadayuki et al. '268 cannot be held to anticipate the current claims, and that the clearly envisaged anticipation rejection is not proper because "the issues is not what the Examiner sees, but rather what one of ordinary skill in the art would understand that the reference (Tadayuki et al. '268) teaches."

The Examiner respectfully disagrees and notes that it has been held that "[w]hen the compound is not specifically named, but instead it is necessary to select portions of teachings within a reference and combine them, e.g., select various substituents from a list of alternatives given for placement at specific sites on a generic chemical formula to

arrive at a specific composition, anticipation can only be found if the classes of substituents are sufficiently limited or well delineated. *Ex parte A*, 17 USPQ2d 1716 (Bd. Pat. App. & Inter. 1990). If one of ordinary skill in the art is able to “at once envisage” the specific compound within the generic chemical formula, the compound is anticipated. One of ordinary skill in the art must be able to draw the structural formula or write the name of each of the compounds included in the generic formula before any of the compounds can be “at once envisaged.” One may look to the preferred embodiments to determine which compounds can be anticipated. *In re Petering*, 301 F.2d 676, 133 USPQ 275 (CCPA 1962).” Please see MPEP 2131.02.

Given the explicit and well delineated disclosure of Tadayuki et al. ‘268, the Examiner *clearly envisages* the 1,1,1,3,3,3-hexafluoropropane central group at least from [0042] and ‘p’ and ‘q’ being 0 at least from [0009] of Tadayuki et al. ‘268. The Examiner notes that one of ordinary skill in the art would recognize these compounds as being disclosed by Tadayuki et al. ‘268. For at least this reason, applicants’ arguments are unpersuasive, and the Examiner also notes that the Declarations filed 07/14/2009 and 01/25/2010 are ineffective against the current 35 USC 102(b) rejection as being anticipated by Tadayuki et al. ‘268 because an allegation of unexpected results cannot overcome a 35 USC 102(b) rejection. See MPEP 706.02(b).

With regard to the obviousness rejection using Tadayuki et al. ‘268, applicants argue with regard on pages 7-8 of their Remarks that they do not need to compare the present invention with the present invention as held at MPEP 716.02(e)(III) and *In re Chapman*, 148 USPQ 711 (CCPA 1966).

The Examiner notes that this principle being relied upon by applicants is for a combination of references to teach a polymer. The Examiner also notes that the same section of the MPEP teaches that “applicant is not required to compare the claimed invention with subject matter that does not exist in the prior art.” Please see MPEP 716.02(e) and *In re Geiger*, 815 F.2d 686, 689, 2 USPQ2d 1276, 1279 (Fed. Cir. 1987); however, in this case the prior art specifically does teach embodiments that are included within the scope of the current claims. For this reason, applicants' arguments and evidence of unexpected results are unconvincing because a single piece of prior art, i.e. Tadayuki et al. '268, alternatively, renders obvious the claimed invention.

Applicants argue on pages 9-10 of their Remarks that Tadayuki et al. '063 do not disclose the alkylidene group in between the two phenyl rings of component (c), including the substituents R<sup>1</sup> and R<sup>2</sup>.

The Examiner respectfully disagrees and notes [0038] of the certified translation cited on 07/27/2009. This translation states that the divalent linking group 'X' may be an “alkylidene groups having 2-10 carbon atoms” and “these hydrocarbon groups whose hydrogen atoms are partially or totally replaced by halogen atoms, such as fluorine atoms.” This at least teaches a propylidene group, i.e. 3 carbon atoms, having all the hydrogen atoms replaced by fluorine. The Examiner has made a factual finding in Tadayuki et al. '063, wherein the reference teaches the bivalent linking groups claimed. Applicants have not set forth a rationale that shows the Examiner is clearly erroneous in his factual findings, and therefore the Examiner maintains his position.

Applicants argue on page 11 of their Remarks that it would not have been obvious to one of ordinary skill in the art to use the teachings of Matsuishi et al. to rectify the deficiencies of Tadayuki et al. '063; specifically, they state that the two references are drawn to different technologies, i.e. non-analogous art.

The Examiner respectfully disagrees and notes that according to MPEP 2141.01 (a), a reference may be relied on as a basis for rejection of an applicants' invention if it is "reasonably pertinent to the particular problem with which the inventor is concerned." A reasonably pertinent reference is further described as one which "even though it maybe in a different field of endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem." Matsuishi et al. is, therefore, a reasonably pertinent reference, because it teaches that their inventive compounds have use in photoresist materials, including providing heat resistance and water-repellency, which is a function especially pertinent to the invention at hand as well as that of Tadayuki et al. '063.

The photosensitive polymer compositions of Tadayuki et al. '063 are positive-type photoresist materials [0002] and [0007]. Matsuishi et al. is drawn to modifiers for photoresist materials that provide heat resistance and water-repellency. It would have been have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the functional equivalent compound of Matsuishi et al. as the component (c) of Tadayuki et al. '063. These compounds are analogs; further, one of ordinary skill would know to make a series of compounds including the methoxymethyl and hydroxymethyl compounds. The motivation for using this compound in the

photosensitive composition is the fact that Matsuishi et al. recognize it as good for photoresists and can provide enhanced water-repellency of resins formed from these compounds. For all of these reasons, it is respectfully submitted that Tadayuki et al. '063 and Matsuishi et al. are analogous art.

Applicants argue on page 11 of their Remarks that the Examiner used hindsight rationale to make his obviousness rejection.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). The Examiner provided a proper rationale and argument to combine the references and the Examiner maintains that the combination is proper.

Applicants argue on pages 11-12 of their Remarks that the Declarations filed 07/14/2009 and 01/25/2010 show unexpected results of the claimed invention, in the form of unexpectedly high sensitivity, over the prior art compounds of Tadayuki et al. '063, and therefore the present rejections should be withdrawn.

The Declarations under 37 CFR 1.132 filed 07/14/2009 and 01/25/2010 are insufficient to overcome the rejection of the claims based upon Tadayuki et al. (JP 2001-312063) as set forth in the last Office action because applicants have not

compared the closest prior art used in the current rejection and the evidence is not commensurate in scope with claim 1.

It is noted that the compounds of applicants' Comparative Examples A, B, and C of the declarations from 07/17/2009 and 01/25/2010 are not the closest prior art given the fact that these Comparative Examples possess moieties that would have 'p' and 'q' equal to 1 and the central 'X' is methane. In order to make a proper comparative example, applicants would need to compare the closest compounds that are taught by the prior art Tadayuki et al. '063 but not included with the scope of the current claims, such as bis(2-hydroxy-3-*methoxymethylphenyl*)-1,1,1,3,3,3-hexafluoropropane or bis(2-hydroxy-3-*ethoxymethylphenyl*)-1,1,1,3,3,3-hexafluoropropane.

Additionally, the evidence is based upon comparing prior art compounds with the inventive compound of claim 2; however, this evidence would not be commensurate in scope with all of the compounds of claim 1 because one species would not be enough evidence to show that the genus of claim 1 would be non-obvious over Tadayuki et al. '063. Please see MPEP 716.02(d).

Lastly, it is noted that the Declaration filed 01/25/2010 does not state that any of the results therein are "unexpected;" furthermore, the last paragraph of point 4 seems to state that the film formed from comparative example C had a "good shape" and "no deformation" was seen, and therefore it is unclear if this film was unexpectedly worse than the current invention.

***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GERARD T. HIGGINS whose telephone number is (571)270-3467. The examiner can normally be reached on M-F 10am-8pm est. (Variable one work-at-home day).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Ruthkosky can be reached on 571-272-1291. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Ruthkosky/  
Supervisory Patent Examiner, Art Unit 1785

GERARD T. HIGGINS  
Examiner  
Art Unit 1785

/G. T. H./  
Examiner, Art Unit 1785